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THE PLANT DISEASE BULLETIN

Issued By

The Plant Disease Survey

Number 5, October 15,
1917.

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

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PLANT DISEASE SURVEY

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REPORTS

A number of reports on the status of fruit diseases September 15 were received too late to be used in the October 1 issue of the Plant Disease Bulletin. Extracts from these reports therefore appear in the present number. The notes on alfalfa, cucumber and ohion diseases give the occurrence October 1, 1917. The data on frost injury were obtained in cooperation with the United States Weather Bureau and the collaborators of the Plant Disease Survey.

FROST INJURY

September 14 light to heavy frosts occurred in parts of Montana and Nevada. September 20 and 21 frost prevailed in the Missouri and upper Mississippi Val-

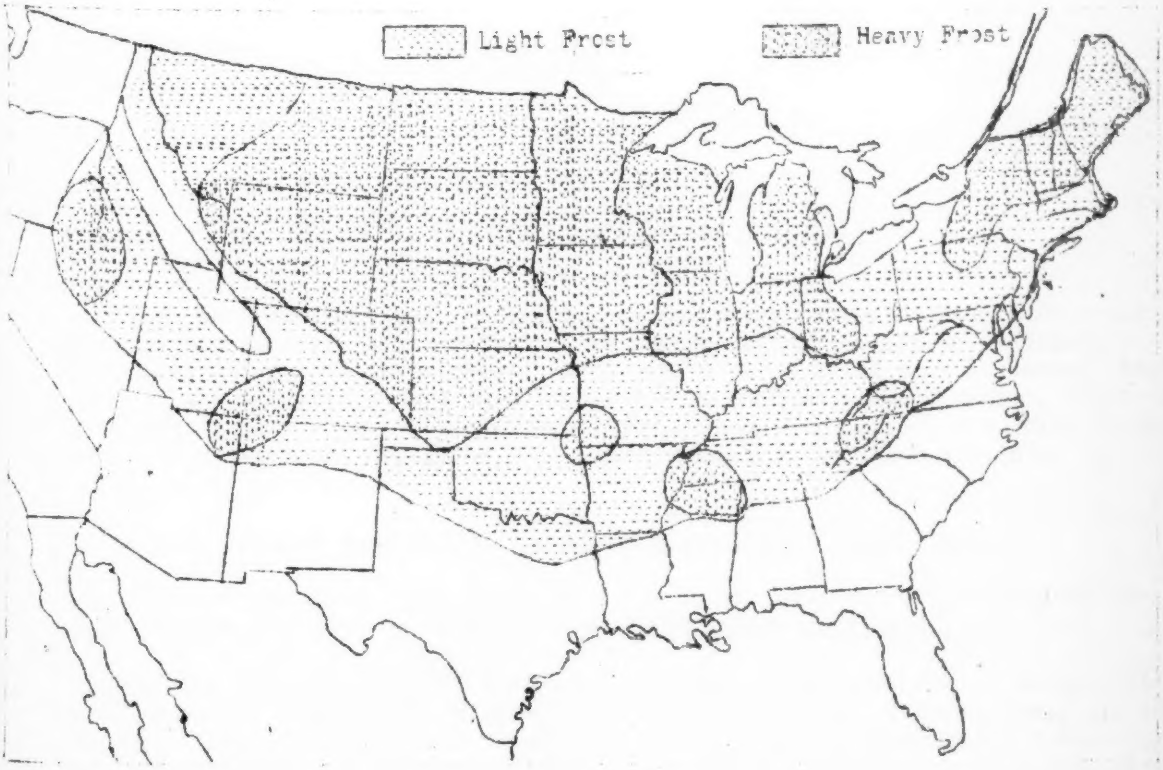

Fig. 4- Map showing regions where light to killing frost occurred during the period September 13 to October 9, 1917.

leys as far south as Nebraska and as far east as Lake Michigan. On September 23 northern New England and northern and northwestern New York were affected. During the period October 6 to 9 killing frosts were reported at points in Kansas, Nebraska, Arkansas, Missouri, Tennessee, Iowa, Illinois, Ohio, Pennsylvania, New Jersey, New York and New England.

The area affected by the first hard frost of September 9 to 12 was shown graphically in the last number of the Plant Disease Bulletin. A map is given in the present number which indicates the areas where killing and light frosts have occurred since September 12 and previous to October 9. The heavily shaded areas indicate killing frost.

DISEASES

ALFALFA

Leaf Spot caused by Pseudopeziza medicaginis.

This leaf spot has been reported from seventeen states in widely separate parts of the country, showing that it is occurring this season in practically all places where alfalfa is grown. In no state is it doing serious damage. Reports of its occurrence have been received from Alabama, Idaho, Kansas, Louisiana, Michigan, Minnesota, Mississippi, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Tennessee, Virginia, Washington and West Virginia.

Yellow Leaf Blotch caused by Phyllosticta medicaginis.

(In a forthcoming paper by F. R. Jones in the Journal of Agricultural Research this fungus is shown to be Pyrenopeziza medicaginis.)

During 1916 and 1917 the disease was collected by F. R. Jones, Office Cotton, Truck and Forage Crop Disease Investigations, Bureau of Plant Industry, in Vermont, Iowa, New York, Ohio, South Dakota, California, Tennessee and Wisconsin. He states that in all probability the fungus occurs in all northern alfalfa-growing regions.

Leaf blotch is reported by collaborators as occurring in Idaho, Kansas, Michigan, Minnesota, Mississippi, New Jersey, North Dakota, Oregon, Virginia and Washington. The greatest amount of damage reported is from Idaho where it is considered the most serious alfalfa disease. It caused defoliation in many cases and is apparently increasing in severity each year in that state. In Kansas it was very severe in 1915, less so in 1916, and this year it is rare. In Oregon it is

stated that the exact distribution and extent of destructiveness is not known but the damage is serious in some parts of southern Oregon.

Anthracnose caused by Colletotrichum trifolii.

Reports of occurrence are at hand from Kansas, Louisiana, Michigan, New Jersey, Ohio, Oklahoma and Virginia. It is not doing serious damage in any place. In Ohio it apparently occurs only in new seedings.

Downy Mildew caused by Peronospora trifoliorum.

Downy mildew is reported from Alabama, Idaho, Kansas, Louisiana, Michigan, Minnesota, New York, North Dakota, Oregon and Washington. It seems to be most abundant on the first crop during wet seasons. It is especially abundant in fields in moist situations. In Washington during 1915 it was very severe, in 1916 common, and in 1917 rare. In 1916 the disease was collected on alfalfa in Maine by F. R. Jones, Bureau of Plant Industry. This is the first report of the disease east of New York.

Sclerotinia Root Rot caused by Sclerotinia trifoliorum.

This root rot is reported from Idaho, Michigan, Oklahoma, Oregon, Tennessee, and Virginia. In Michigan in 1914 it was seen in great abundance. Spots in alfalfa fields were killed. Few reports have been received this year, however. The greatest amount of damage this season is reported from Tennessee where it was very severe in fields in the western part of the state. Alfalfa is dying out in spots which seem to grow larger from season to season. The disease is also very common on crimson and red clovers, seriously threatening the production of the former crop in Tennessee.

Root Rots due to Various Causes.

Rotting of the roots and crowns of alfalfa plants is reported as being moderate to severe in the states of Connecticut, Kansas, Louisiana, Minnesota, Mississippi, New Mexico, New York, North Dakota, Ohio, Oregon and Virginia. In a majority of cases the causal organism is undetermined but in the states of Kansas, Louisiana, and probably Mississippi, the organism responsible appears to be Rhizoctonia sp. (R. crocorum ?). In some states much rotting is supposed to be associated with winter killing.

Winter Killing caused by Unfavorable Temperature Conditions.

This injury is reported in from moderate to severe amounts in the states of Connecticut, Kansas, Louisiana, Minnesota, Montana, New Jersey, New York, Ohio, Oregon, Tennessee, Washington and Wyoming. It is most severe in the eight latter

states. In eastern Oregon a great deal of damage was reported. In Crook County in one locality 300 to 400 acres were killed, and in a section of Union County several hundred acres were destroyed. In eastern Tennessee winter killing was especially severe last winter, Peruvian alfalfa being most seriously injured, while western alfalfa and Grimm seemed to suffer less. In ordinary seasons winter killing of alfalfa is not serious in Tennessee.

Other Diseases.

A Phoma sp. is reported in Kansas as being quite severe on stems during the years 1915, 1916 and 1917. A stem cankering trouble was also observed and the fungus Pleosphaerulina briosiana has been collected in this state.

Macrosporium sp. is the most common leaf disease in Louisiana. Cercospora leaf spot also is very common and does some damage in this state.

Rust caused by Uromyces is reported as being severe in Kansas in 1915 and is common and does considerable damage, especially in old fields in Louisiana. In New Mexico it is very common and in the first two crops the loss is estimated at from 1 to 2%.

A disease bringing about a chlorotic condition of alfalfa leaves has been reported from several points in New Mexico where it is estimated that about 1% of the crop is damaged.

A bacterial disease is reported from Oklahoma where it has appeared on the College Farm. It was quite common early in the season and seems to be of some importance.

A white spot disease has been observed apparently for the first time in Idaho this spring. The symptoms are much the same as, if not identical with, those of the white spot reported by Crabill from Virginia (Phytopath. 6:91-93, 1916.)

APPLE

Scab caused by Venturia inaequalis.

Idaho: Only a slight amount on the leaves, pedicels and young fruit. Practically none on the late fruit. First appeared early in May. Dusting is not used except on trees on steep hillsides near Post Falls, Idaho. Results seem to be as satisfactory as those secured from spraying. No scab has ever been reported from southern Idaho.

Kansas: Less scab this year than usual, occurring in slight amounts on leaves, pedicels and young fruit. Dusting has been tried but conditions are not favorable for it. Bordeaux mixture is necessary in order to control blotch. Scab practically made its first appearance in Kansas in 1915. In 1916 it was quite severe. In 1917 it is much less severe although spring conditions were favorable for it.

Missouri: Quite common this year but not more so than last. Leaf and late fruit infection severe.

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Oklahoma: Prevalent in about the same amount as usual with a very slight amount of infection of leaves and a moderate amount of infection of late fruit. Dusting is being taken up experimentally at the Station. Disease is of secondary importance.

Oregon, Willamette Valley: (D. F. Fisher, Office of Fruit Disease Investigations, Bureau of Plant Industry). More prevalent than usual. Moderate amount of leaf and pedicel infection; severe infection of young fruit, and moderate amount of infection of late fruit. The effectiveness of spraying is variable. Most growers make an attempt to spray well but there is usually much disease. Dusting is being taken up thus far only in an experimental way by the Agricultural College and the Niagara Sprayer Company. Scab effectively prevents this section from more than nominal competition with the irrigated apple-growing sections of the Northwest which are scab free.

Pennsylvania: Not nearly so prevalent this year as last. 10% in 1917 as compared with 50-75% of disease in 1916. Infection of leaves and young fruit slight, occurring about June 20. Northern Spy, Baldwin, Rome, Stayman most affected. Grimes and York least affected. Spraying entirely successful. Dusting is being taken up extensively in Adams and York Counties.

Washington, Wenatchee and Yakima Valleys: (D. F. Fisher, Bureau of Plant Industry). Not prevalent in these districts which are the chief commercial ones. Other sections not under observation.

West Virginia: Considerably more scab than usual. Infection of leaves and young fruit severe. Infection of late fruit moderate. Lauver, Rome Beauty and Ben Davis most affected. Good results from spraying where carefully used. Bordeaux mixture sprays are best. Dusting is being taken up to a very great extent but is not yet recommended unreservedly for apples. Scab is confined to comparatively local areas West Virginia.

Wisconsin: More disease than usual. Leaf and young fruit infection severe. Late fruit infection slight. Snow, Wealthy, McMahon and Orange Cider most affected and Scott Winter least affected.

Cedar Rust caused by *Gymnosporangium Juniperi-virginianae*.

Idaho: Does not occur.

Kansas: About the same as last year. First reported in May. Leaf infection slight to moderate, fruit infection very slight. Disease is not severe and in general red cedars are no hindrance. The ordinary sprays help to control it somewhat. (Bordeaux mixture is applied at cluster cup stage; lime sulfur as pedicels fall, and Bordeaux for three to five weeks spray.

Missouri: Prevalent in about the same amount as usual. Not at all severe.

Oklahoma: Present but not at all serious.

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Oregon, Willamette Valley: (D. F. Fisher, Bureau of Plant Industry). Not prevalent.

Pennsylvania: Probably worse than last year. First reported June 13. Mostly leaf infection. Red cedar is extremely abundant in orcharding sections of Cumberland Valley and it is in this valley that the disease is worst on apples. York Imperial most affected. Stayman least affected.

Washington, Wenatchee and Yakima Valleys: (D. F. Fisher). Rust not prevalent.

West Virginia: More severe than usual. First reported June 1. Very severe on the younger leaves but practically no infection of the fruit. Cedar very abundant, especially in apple-growing sections. Cedar eradication is being practiced to a very large extent in some localities but it must be carried out far more extensively to secure good results. York Imperial, Rome Beauty most affected. Winesap and Northwestern Greening least affected.

Wisconsin: Less than usual. First reported in June. Leaf infection severe on certain varieties. Cedars being eradicated in some sections.

Bitter Rot caused by *Glomerella rufomaculans*.

Idaho: Not prevalent.

Kansas: None.

Oklahoma: Not at all prevalent.

Oregon: Not prevalent.

Pennsylvania: More prevalent than last year. First noticed in August at a time when fruit was nearly mature. More severe than has been previously seen in the state but the disease is not yet general. 5% of Grimes variety affected and in the same orchard Stayman, Wealthy, Wagoner, Williams and Early Red were not at all affected.

Washington, Wenatchee and Yakima Valleys: (D. F. Fisher). Not prevalent.

West Virginia: Very little in state.

Wisconsin: Rare in state.

Blotch caused by *Phyllosticta solitaria*.

Idaho: Does not occur.

Kansas: Always very severe where spraying is not practiced.

Missouri: Common in southern part of state.

Oklahoma: Very prevalent and destructive to the fruit. Disease is present in all orchards about Stillwater and very bad in many. Apples in the markets are spotted with it and instances have been noted where only five or six bushels of sound apples were obtained from two wagon loads. Arkansas Black and Gano are most susceptible. Spraying is effective but not extensively practiced.

Oregon, Willamette Valley: (D. F. Fisher, Bureau of Plant Industry). Not prevalent.

Pennsylvania: Disease gaining in the southeastern part on Grimes, Smith Cider, Stark and Black Twig.

Washington, Wenatchee and Yakima Valleys: (D. F. Fisher). Not prevalent.

West Virginia: Occurs locally at several points in the state but is not of great importance.

Wisconsin: Rare.

Bitter Pit (Physiological).

Oregon, Willamette Valley: (D.F. Fisher, Bureau of Plant Industry). "Bitter pit is prevalent to a considerable extent since two of the most susceptible varieties, Baldwin and Northern Spy are grown."

Washington, Wenatchee and Yakima Valleys: (D. F. Fisher). "Bitter pit is very prevalent on certain varieties such as Grimes, Northern Spy, Baldwin, Black Twig and Yellow Bellflower, and occasionally other varieties, especially on young trees that have been heavily forced by irrigation. It is the general practice to market this fruit as quickly as possible since most of the disease appears in storage."

Northwestern Anthracnose caused by Neofabraea malicorticis.

Oregon, Willamette Valley: (D. F. Fisher, Bureau of Plant Industry). "Very prevalent throughout this entire section. Unless controlled by fall spraying with strong Bordeaux it spreads rapidly and causes severe limb and twig cankers on old trees and the following year many dead branches are found. On young trees it often kills a plantation inside of two years. Has been especially bad in 1917 and this can perhaps be traced to laxity of spraying last fall due to the high cost of copper sulphate."

Washington: (D. F. Fisher). "Not prevalent in the Wenatchee and Yakima Valleys but is very destructive in family orchards in the Puget Sound region and all of the more humid sections of the Coast region, also to commercial plantings in the White Salmon District. It is apparently well controlled by late summer and fall sprayings with Bordeaux."

Powdery Mildew (Podosphaera leucotricha).

Washington: (D. F. Fisher, Bureau of Plant Industry). "Powdery mildew has been less prevalent in Wenatchee and Yakima Valleys than in 1915 but more so than in 1916. Loss due to blighting of fruit buds difficult to estimate but is undoubtedly heavy in infected orchards. Russeting of fruit causes a reduction in grade from "Extra Fancy" to second grade each year which amounts to 25% or more of the sale price. Control difficult in this climate since sulfur sprays can not be used in summer. Copper sprays have not proven very efficient and are objectionable for other reasons. Growers have generally ceased summer spraying for mildew on this account, preferring loss of grade to spray injury."

West Virginia: Powdery mildew quite prevalent and causing appreciable injury.

Other Diseases.

Fruit spot caused by Phoma pomi more general than ever before in Pennsylvania. Severe on Rambo, Baldwin, Stayman, Bellflower and Rhode Island Greening.

Sooty blotch caused by Leptothyrium pomi is very prevalent in West Virginia and severe in Pennsylvania where there is 75% infection on unsprayed apples.

Black rot, leaf spot, and canker caused by Physalospora cydoniae (= Sphaeropsis malorum) very prevalent on leaves in Pennsylvania and West Virginia. In the former state severe fruit infection occurred on Rambo and Gravenstein.

CUCUMBER, MUSKMELON, WATERMELON, SQUASH, PUMPKIN, ETC.

Reports as to the occurrence of diseases of Cucurbits have been received from the following states: Alabama, Arkansas, Connecticut, Florida, Idaho, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

Where no special report is given below from any of these states it signifies that the disease does not occur, that it is of little importance, or that no available data is at hand.

Mosaic (Cause not definitely known)

Mosaic seems to be the most serious disease of cucumbers and muskmelons in the northern states. According to W. W. Gilbert, Bureau of Plant Industry, it is doing more damage than any other cucumber disease in Michigan or Wisconsin and is severe in the large seed-producing section in the vicinity of Rocky Ford, Colorado. The disease is apparently increasing in severity from year to year and the fact that it is not greatly influenced by weather conditions makes it a serious economic problem. Collaborators have reported its prevalence this year in Connecticut, Michigan, Minnesota, New York, Ohio, Virginia, West Virginia and Wisconsin.

Anthracnose caused by Colletotrichum lagenarium.

This disease is second in importance to mosaic this season but in some states, especially in the south on watermelons, it has been of primary importance. In general it is not as serious as last year. It has been worst this season in Minnesota, South Carolina and Virginia on watermelon, and in northern Indiana on cucumbers.

Alabama: Present every year. With the exception of nematodes it is probably the most destructive disease of Cucurbits.

Arkansas: Not prevalent this year except as leaf spot. Watermelon leaves were generally killed by the end of September. Severe on this host.

Connecticut: Most injurious to watermelons but not especially serious this year.

Florida: Observed on watermelon. First appeared in May. Leaf infection 10-25%, fruit infection not severe. Probably 40-50% of plants in the vicinity of Gainesville affected. Two sprayings of Bordeaux mixture 4-4-50 apparently checked the spread.

Kansas: Less than usual. Fruit affected most. Bordeaux mixture where used gives satisfactory results.

Louisiana: About the same as usual on watermelons. First appeared in August. Leaf and fruit infection slight.

Minnesota: More serious this year than usual, especially on muskmelons. First appeared August 24. Muskmelons were affected as high as 60% of the fruit in a number of fields.

Missouri: About the same as usual. Very common on watermelons.

New Jersey: About the same as usual. Most severe on watermelons. Worst in South Jersey.

Ohio: Rather less than usual.

South Carolina: More prevalent than usual in all sections of the state, causing complete defoliation of the watermelons in some places. (See Pl. Dis. Bul., 1917: 27.)

Tennessee: About the same as usual. First reported in August. 25% of the watermelons affected. Caused unsightly fruit but little loss.

Virginia, (McClintock): About the same each year. Very serious in this section. First appeared late in June in cold frames near Norfolk. Leaves badly affected to the extent of 100% in some cases July 25. Fruit injury not serious. Much damage done to cucumbers, muskmelons and watermelons but little or no injury to pumpkin or squash.

Wisconsin: Rather less than usual. First appeared in July, infecting chiefly the leaves.

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HACKBERRY: Rather less than usual. Often appeared as only infecting chiefly the leaves.

Angular Leaf Spot caused by Bacterium lachrymans.

The disease is more destructive than last year and is reported by W. W. Gilbert as being severe on leaves of cucumbers in Michigan, Indiana, Wisconsin, Iowa, and Colorado. In the latter state it was found in the seed-producing centers about Rocky Ford. It is reported by Coons as doing 25% damage to certain seed breeding plots at the Agricultural College, East Lansing, Michigan.

Bacterial Wilt caused by Bacillus tracheiphilus.

In general bacterial wilt has not been as serious this season as it was last year.

Alabama: Occurs but no data as to severity.

Connecticut: Same as usual. Worst on squash.

Florida: Observed in March on cucumbers. Sanitation and insect control employed.

Michigan: Very common. Disease is apparently as severe as usual. First reported August 15. Roguing of diseased plants and beetle control are advised.

Minnesota: Disease worse than usual. First noticed August 14. Very serious on muskmelons in truck gardens. Fairly serious on cucumbers.

New Jersey: Less than last year.

New York: Probably about the same as last year. First reported July 27. Specimens have been received from seven counties. Most severe on cucumbers. Roguing of diseased plants and insect control advised.

Ohio: Apparently somewhat less disease in the fields this year. In greenhouse severity reported has been variable. Destruction of affected plants and control of the striped cucumber beetle usually gives good results.

Tennessee: More common on cucumber this year than last. First reported in June. Burning vines and killing insects advised.

Virginia, (McClintock): Not so abundant in 1917 as in 1916. First reported early in the summer. Most severe on cucumbers and muskmelons. Not observed on watermelon or pumpkin this year.

West Virginia: About the same as usual. First reported late in July.

Downy Mildew (Pseudoplasmopara cubensis Rostow.= Peronoplasmopara cubensis (B. & C.) Cl.)

Common this year but not so prevalent as usual along the Atlantic Coast in truck sections where climatic conditions were favorable. Lateness of occurrence

prevented serious damage in places where it is sometimes destructive.

Connecticut: A little later in appearance this year than last and perhaps not quite so bad as usual. Appeared about August 1 on cucumbers, which are affected worst as the disease always appears first on this crop and then later on muskmelon. Other hosts rarely injured to any extent. Good results from spraying in average year if properly done.

Florida: Observed to some extent on cucumber, pumpkin and squash throughout the state. Exact amount of damage not determined. Last year the cucumber crop was cut about 5%. Spraying generally effective where properly applied.

Louisiana: Common but not so prevalent as in previous years. Muskmelon and squash most affected. Sprayed fields that have been noticed are comparatively free from the disease.

New Jersey: Less than 1916. Good results from spraying.

New York: Prevalent in about the same amount as usual on cucumbers on Long Island. The yield of this crop is much reduced annually by this disease. Spraying has been found to be effective.

Virginia (McClintock): Very serious late in the season in 1916 but not observed this year, probably due to wet weather cutting the crop short. Most serious on cucumbers.

Wisconsin: Slight amount of the disease reported in July.

Scab caused by Cladosporium cucumerinum.

Scab has not been serious this year, probably on account of warm, dry weather. It is reported by W. W. Gilbert as doing some damage in Wisconsin and as present but not destructive in Michigan.

Connecticut: Present on melons but not very injurious.

Minnesota: Fairly abundant last year. This year it was also found in at least one region where it was very serious on the leaves and on some of the fruit, causing premature death of the vines and consequent reduction of the yield. First appeared August 10.

Wisconsin: Very limited in fields but considerable damage in greenhouse.

Other Diseases.

Fusarium wilt was very much more prevalent this year than usual in New Mexico. First appeared August 2 (Pl. Dis. Bul., 1917: 28). In Kansas it was reported from a single field and in Michigan 50% damage is reported from one locality. An undetermined wilt disease is reported as having been serious on the Station Farm, New Haven, Connecticut.

Rust of muskmelon caused by Alternaria brassicae nigrescens was general and severe in Arkansas.

ONION

Smut caused by Urocystis cepulae.

Alabama: Occurs at times in some of the producing centers on the Gulf Coast.

Connecticut: "No complaint this year. As a rule growers do not use the smut-infested land. Onion growing on the decline in the last ten years for various reasons."- G. P. C.

New York: About the same as last year. It is occurring this year in Orange, Seneca, Wayne, Ontario, Monroe and Genesee Counties. In infested fields 2-10% infested plants are reported. Formaldehyde is used to a considerable extent in onion sections of the state with satisfactory results.

Ohio: Somewhat more than in 1916. It is occurring this year in Lake, Cuyahoga, Wayne and Ross Counties. It is estimated that 15-20% of the plants in infested fields are diseased. Smut appears to be increasing slightly from year to year in onion-growing sections. Formaldehyde disinfection at planting time is more generally employed than sulfur.

Oregon: Scatteringly present but ordinarily not in serious quantities. It was reported this year from the Willamette Valley.

Wisconsin: Disease limited in its occurrence. Reported this year from Racine, Kenosha, also Brown County. From 5-90% disease in infested fields. Disease is increasing in the onion-growing sections. Formaldehyde disinfection is used with excellent results.

Downy Mildew caused by Peronospora schleideniana.

Louisiana: The disease is very bad in the chief onion-growing sections of the state. First appeared in February. Practically all fields in the above region affected. The yield of dry onions is much decreased and the seed crop is generally almost a total loss on account of mildew.

New York: More prevalent this season than usual. First noted July 19. Reported as being destructive in Westchester, Chemung, Wayne, and Monroe Counties.

Oregon: Less mildew present than for many years. None at harvest time. First reported in June. Only slight occurrence early in the season. In 1916 many fields suffered 40-50% loss but were free from the disease in 1917.

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Vermicularia spot caused by Vermicularia circinans.

Louisiana: Very common but does not seem to cause much loss.

Minnesota: Reported in previous years as being fairly abundant but not destructive.

New York: Vermicularia has been reported.

Ohio: Apparently much less than in 1916.

Wisconsin: Widespread on white onions.

Other Diseases.

Ohio: "Botrytis, known to us as Sclerotium cepivorum, causing neck rot, has been collected in Hardin County and at one or two other points. It is at times serious on white onions but apparently not at the present season."- A. D. S.

Wisconsin: Botrytis sp. quite serious on all onions, especially so on white onions.

Fusarium rot has caused some loss in Walla Walla section, Washington, where onions are an important crop.

"A disease of the leaves and stems produced by a species of Macrosporium is very abundant and does a great deal of damage in Louisiana. It usually follows mildew or thrips and it is difficult to say what trouble is responsible for the loss. The Macrosporium should be considered as one of the most important onion parasites in the state."- C. W. E.

PEACH

Leaf Curl caused by Exoascus deformans.

Idaho: Less than last year. Quite severe near Moscow. First appeared in May. Few peaches here. Found in all peach-growing areas.

Kansas: Less prevalent than last year. First appeared at Manhattan May 30. Only slightly severe. Peaches not commercially grown.

Missouri: About the same as last year.

Oklahoma: About as prevalent as last year. First appeared at Stillwater in April. Disease not at all severe.

Oregon: Somewhat more abundant than last year. On most susceptible varieties practically 100% of foliage affected in many sections. Elberta most affected. Winter spraying only is used. Majority of commercial growers probably spray but many do not and others spray too late.

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Pennsylvania: Not as prevalent as last year. General infection but not severe in sprayed orchards. First appearance June 10. Very severe on unsprayed trees causing 75% loss in at least two orchards. Disease worst in Erie, Allegheny and Beaver Counties and southeastern part of state. Little spraying done except on large commercial plantings which are few.

West Virginia: More prevalent than last year. First appeared May 10. Moderate amount on early foliage but did not spread much. Little spraying done.

Scab caused by Cladosporium carpophilum.

Scab is further reported as not being found this year in Idaho, Kansas, Oklahoma, Oregon and only slightly prevalent in Missouri and West Virginia. In Pennsylvania however, it was very prevalent and in unsprayed orchards in central and western Pennsylvania there was as much as 95% infection.

Brown Rot of Stone Fruits caused by Sclerotinia cinerea.

Idaho: Less prevalent than last year. Found only on wild choke cherry. Not reported on peach or plum.

Kansas: About the same as last year. First appeared in June. Quite severe on plum and prune, only moderately severe on cherry. Stone fruits not commercially grown in state.

Missouri: About the same as usual. Not severe on peach but quite destructive to plum, particularly the European varieties.

Oklahoma: About the same as last year. Never a serious disease in state.

Oregon, Willamette Valley: (D. F. Fisher, Bureau of Plant Industry). More prevalent than last year. First reported April 20. Very slight early infection of plum and severe late infection on unsprayed trees. Severe blossom blight of cherry, 75-90% being infected in some cases. Very slight amount of rot of cherry fruit. All prunes affected. Elton Cherry seems most susceptible but all other varieties are damaged. Brown rot is the only disease of importance affecting prunes and is probably the chief one affecting cherries. Both fruits are widely grown in this section.

Pennsylvania: About 50% more rot this year than usual on peach and plum. The wet weather during May and June caused spread of the fungus. Mayflower, Greensboro, Carmen and Late Crawford peaches most affected. Elberta, Hiley and Bell least affected. Canker state common.

Washington, Clarke County: (D. F. Fisher). More prevalent than last year. First appeared April 20. 50-75% of unsprayed prunes rotted. Early infection not common. Very slight loss of ripe cherries. 75-90% of blossoms blighted. All prunes susceptible, sugar prune especially.

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West Virginia: Only a moderate amount of blossom blight, twig blight and brown rot early in the season.

Wisconsin: About the same as last year, affecting cherries particularly. Disease is not of commercial importance in state except in the blossom blight stage.

Other Diseases.

"Coryneum blight caused by Coryneum beijerinckii has done a great deal of damage to buds and twigs in the Willamette Valley, Oregon, and probably elsewhere in the state during the preceding winter. This summer, however, there has been no evidence of fruit spot of foliage or twig infection of any kind or consequence, in the Marion County section where last year it was severe. This is probably true elsewhere as no complaints have come to this office."- H. P. B.

"Coryneum blight is widely prevalent and is a serious menace to peach in the Willamette Valley, Oregon. Twig cankers and blight especially severe. However, since peach growing is largely confined to home plantings the damage is not of much commercial importance. The disease is very prevalent in southwestern Washington but there are no commercial plantings in that region."- D. F. F.

"Powdery mildew is less prevalent this year than last in Wenatchee and Yakima Valleys, Washington, but of recent years has not been of much economic importance. Earlier it was very prevalent and caused serious losses." D.F.F.

In Oregon there is less mildew than usual on account of the long, dry summer.

Black spot caused by Bacterium pruni is one of the most serious peach diseases in Oklahoma.

Yellows is quite prevalent in West Virginia, particularly in Hampshire County.

PEAR

Fire Blight of Pear, Apple, Quince, etc., caused by Bacillus amylovorus.

Idaho: Almost none this year. Very bad last year. White ash on campus proved quite susceptible. Decrease in amount probably due to dry summer in 1916, late cold spring in 1917 followed by an exceptionally hot, dry summer.

Kansas: Less than last year. First appeared May 8. Very slight to moderate on apple. Slight to moderate on pear.

Missouri: Not common.

Oklahoma: Very slight this year compared with last year. No damage. Dry, cool spring and early summer months tended to lessen spread. Two years ago it was very bad.

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Pennsylvania: Probably 20% less than last year. First reported June 20. Slight to moderate on all hosts. Of the apples Jonathan, Wealthy, Alexander and Gravenstein most affected.

Washington, Wenatchee and Yakima Valleys: (D. F. Fisher). "More prevalent than last year. First reported April 1. Severe on both apples and pears, particularly blossom and twig blight forms. Clapps Favorite, Bartlett and Idaho pears are very susceptible. Spitzenberg, Jonathan and Grimes are most susceptible of the apples. Blight is only in isolated sections of Wenatchee region and is under rigid control. It is not spreading. In Yakima County it is on the increase and little is now being done to control it. Two years ago an efficient campaign of eradication was begun but due to lack of funds has been abandoned."

West Virginia: Very much less than last year. Reported about May 15. Very slight to moderate on pear and apple. Cold, wet weather, especially during blossoming time, undoubtedly accounts for the small amount of infection.

Wisconsin: More than last year. First reported June 18 on apple. Transcendent Crab, Yellow Transparent and McMahon badly affected. In some orchards it was found impossible to keep the blighted twigs out out during the summer.

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